What is claimed is:

1. An isolated and purified peptide comprising the GD domain.

2. An isolated and purified peptide having an amino acid sequence selected from the group consisting of

GDDINRRYDSEFQ,

PSSTMGQVGRQLAIIGDDINRRYDSEFQ,

QVGRQLAIIGDDINRRYDSEFQTMLQHLQPT,

LSECLKRIGDELDSN,

LKRIGDELD,

QDASTKKLSECLKRIGDELDSNMELQ,

LALRLACIGDEMDVS,

IGDEM,

CMEGSDALALRLACIGDEMDVSLRAPRL,

VGRQLAIIGDDINRR,

and functional equivalents thereof.

3. A mutant of a protein selected from the group consisting of Bak, Bax and Bip1a, characterized in that it comprises the GD domain and exhibits Rat-1 cell killing activity substantially equivalent to that of wild-type Bak.

4. A mutant of a protein selected from the group consisting of Bak, Bax and Bip1a, characterized in that it comprises the GD domain and exhibits Bcl-x_L binding substantially equivalent to that of wild-type Bak.

5. An isolated and purified nucleotide sequence encoding a GD domain peptide.

6. An isolated and purified nucleotide sequence encoding the peptide of claim 2, wherein said nucleotide sequence is as shown in Figure 8.

7. An isolated recombinant DNA molecule consisting essentially of a nucleotide sequence that encodes a GD domain peptide.

8. A vector consisting essentially of a recombinant DNA molecule encoding a GD domain peptide.

9. A vector comprising a recombinant DNA molecule encoding a GD domain peptide, wherein said vector expresses an antisense RNA of said recombinant molecule.

10. A host cell transformed with the vector of any one of claims 8 or 9.

11. The host cell of claim 10, wherein said host cell is a mammalian cell.

12. A method for producing isolated GD domain peptide, comprising:

(a) constructing the vector of claim 8;

(b) transforming a suitable host cell with said vector of step (a);

(c) culturing said host cell under conditions which allow the expression of said GD domain peptide by said host cell; and

(d) isolating said GD domain peptide expressed by said host cell of step (c);

wherein isolated GD domain peptide is produced.

13. The method according to claim 12, wherein said host cell is a mammalian cell.

14. An antibody raised against a GD domain peptide.

15. The antibody of claim 14, wherein said antibody is selected from the group consisting of a polyclonal antibody and a monoclonal antibody.

16. The antibody of claim 15, wherein said antibody is detectably labeled.

17. The antibody of claim 16, wherein said detectable label is selected from the group consisting of: a radio label, an enzyme label, a co-factor label, a fluorescent label, a paramagnetic label, a chemiluminescent label, and a metal label.

18. A detectably labeled nucleotide probe, comprising a first nucleotide sequence which is substantially complementary to a second nucleotide sequence that encodes the GD domain peptide.

19. A pharmaceutical composition comprising a GD domain peptide and a pharmaceutically acceptable carrier.

20. A method of identifying an agent capable of modulating GD domain mediated heterodimerization, comprising:

carrying out a heterodimerization assay which includes a first and a second protein or polypeptide comprising the GD domain, wherein said first and second protein or polypeptide are different, and an agent;

determining whether said agent inhibits or augments heterodimerization of said first protein or polypeptide to said second protein or polypeptide;

wherein if inhibition or augmentation of heterodimerization is determined, it indicates that said agent is capable of modulating GD domain mediated heterodimerization.

21. The method of claim 20, wherein said first and said second protein or polypeptide is selected from the group consisting of Bak, Bcl-x_L, Bax and Bip1a.

22. A method of identifying an agent capable of modulating GD domain mediated homodimerization, comprising:

carrying out a homodimerization assay which includes a first and a second protein or polypeptide comprising the GD domain, wherein said first and second protein or polypeptide are the same, and an agent;

determining whether said agent inhibits or augments homodimerization of said first protein or polypeptide to said second protein or polypeptide;

wherein if inhibition or augmentation of homodimerization is determined, it indicates that said agent is capable of modulating GD domain mediated homodimerization.

23. The method of claim 22, wherein said first and second protein or polypeptide is selected from the group consisting of Bak, Bcl-x_L, Bax and Bip1a.

24. An agent identified by the method of any of claims 20-23.

25. Use of an antibody against a GD domain peptide to screen a cDNA expression library for clones comprising DNA inserts encoding immunocrossreactive proteins.

26. An agent comprising a Bcl-2/Bcl-x_L mimetic.

27. A peptide comprising the GD domain selected from the group consisting of QVG, PEM and derivatives of either of them.